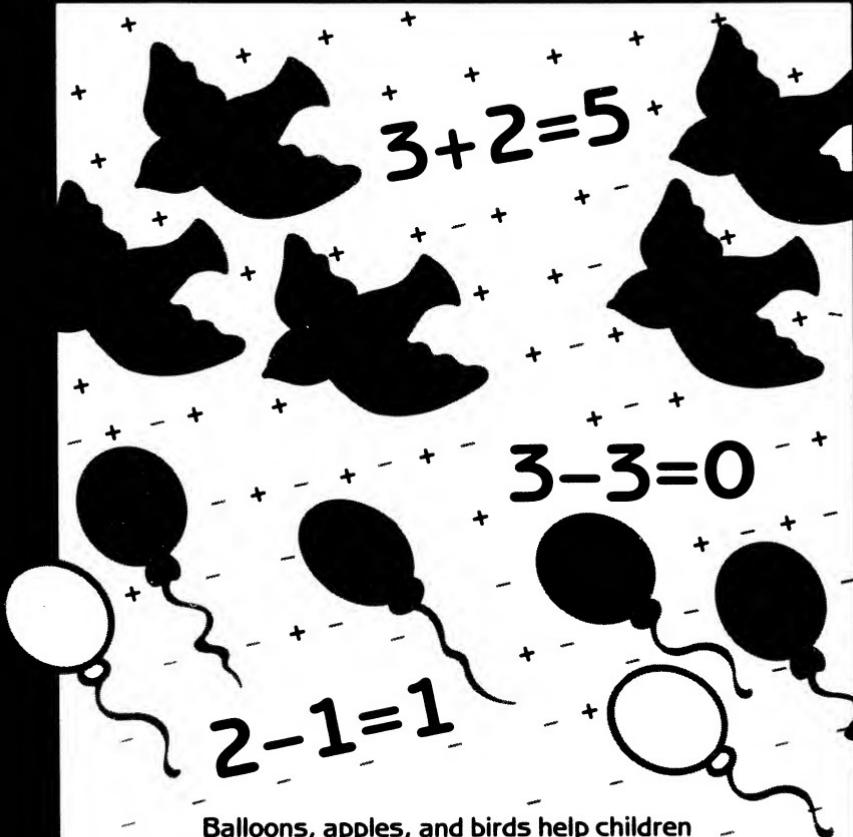


+ microADDITION

microSUBTRACTION -



Balloons, apples, and birds help children
learn the FUNDamentals of arithmetic

Ages 4 and Up

HAYDEN
SOFTWARE

CREDITS

Project Management: Ricki Pappo, Gail Rothenberg

Programming: Anthony Cote, Andrew E. Taylor, Brian Root,
Kerry Wentworth

Package Design: Judy Marlowe, Robert Fernandez

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INTRODUCTION

The color, tunes and animation in **microAddition/microSubtraction** make learning addition and subtraction fun. It teaches you the values of numbers, shows you how to add and subtract, quizzes you on what you have learned, and has a calculator that can help you correct your math homework.

microAddition/microSubtraction helps you to learn about addition and subtraction in one game. You can easily choose to work on either skill at any time. In both **microAddition** and **microSubtraction**, you have four game options. Options one and two introduce you to numbers and their values. Option three uses colorful balloons to explain addition and subtraction. Option four gives you a quiz on addition or subtraction or uses the **microAddition/microSubtraction** calculator to quickly solve problems and check your homework.

Ages: 4 and up

Directions

Here are some general hints and directions for playing **microAddition/microSubtraction**. This section describes how to load the program into your computer and the important keys you need to remember while you are playing the game. It is divided into four parts. Apple, IBM, Commodore 64 and ATARI. Read the section about your computer.

**** Note that your disk has **microAddition/microSubtraction** on both sides of the disk. Each side is for a different computer brand. Apple and IBM compatible programs are on the same disks and Commodore 64 and Atari compatible programs are on other disks. Be sure that the label that is facing you when you insert the disk into your drive specifies your computer brand.

APPLE

Required Hardware

Apple II+, IIe, or IIC with 48K, one disk drive and a color or black and white monitor. Be sure to have the Caps Lock in the down position for the Apple IIe and IIC.

Getting Started

To play **microAddition/microSubtraction**:

- 1) Be sure your computer is OFF.
- 2) Insert the disk into the disk drive.
- 3) Turn on your computer and monitor.

Keys to Use

Menu Key

The <**ESCAPE**> key will always allow you to return to the previous menu screen. For example, if you are playing **microAddition** menu option 1, NUMBERS, and you press <**ESCAPE**>, you will return to the opening **microAddition** menu screen and can choose to play OPTION 1, 2, 3, or 4. Or, you can press <**ESCAPE**> again and return to the **microAddition/microSubtraction** option screen. At this point you can decide to change your game play to **microSubtraction**.

New Problem Key

During game play, press <**RETURN**> when you want a new problem. Each problem will remain on the screen for you to study. When you are ready to move on to the next problem, press <**RETURN**>.

IBM

Required Hardware

IBM PC with graphics card or PCjr, 128K, one disk drive and a color or black and white monitor.

Getting Started

To play **microAddition/microSubtraction** you need to put DOS onto your disk. To do this, you will need a copy of DOS 2.0 (or a later version). If you have an IBM PCjr, be sure to have the BASIC cartridge in the slot.

To put DOS on your **microAddition/microSubtraction** disk temporarily remove the write-protect tab from the disk and:

SINGLE DISK DRIVE SYSTEMS:

- 1) Insert DOS into the disk drive and turn on your computer and monitor.
- 2) After you have answered the date and time prompts, you will receive an A > prompt.
- 3) Remove the DOS disk and insert the **microAddition/microSubtraction** disk.
- 4) Type **COPYDOS1 <ENTER>** and follow the instructions on the screen. The instructions refer to Drive A as the **micro-Addition/microSubtraction disk** and Drive B as the DOS disk.

DUAL DRIVE SYSTEMS:

- 1) Put DOS into Drive A and turn on your computer and monitor.
- 2) After you have answered the date and time prompts, you will receive an A > prompt.

- 3) Remove your DOS disk and insert the **microAddition/microSubtraction** disk into Drive A and the DOS disk in Drive B.
- 4) Type **COPYDOS2** and follow the instructions on the screen.

Now, to play **microAddition/microSubtraction**:

- 1) Replace the write-protect tab.
- 2) Press the <CTRL/ALT//DEL> keys simultaneously and **microAddition/microSubtraction** will start.

Next time you play **microAddition/microSubtraction**, simply insert the disk into your drive and turn on the computer and the monitor. The disk will boot automatically.

Keys to Use

Menu Key

The <**ESCAPE**> will always allow you to return to the previous menu screen. For example, if you are playing **microAddition** menu option 1, NUMBERS, and you press <**ESCAPE**>, you will return to the opening **microAddition** menu screen and you can choose to play OPTION 1, 2, 3, or 4. Or, you can press <**ESCAPE**> again and return to the **microAddition/microSubtraction** option screen. At this point you can decide to change your game play to **microSubtraction**.

New Problem Key

During game play, press <**ENTER**> when you want a new problem. Each problem will remain on the screen for you to study. When you are ready to move on to the next problem, press <**ENTER**>.

COMMODORE 64

Required Hardware

Commodore 64, on one disk drive and a color or black and white monitor.

Getting Started

To play **microAddition/microSubtraction**:

- 1) Be sure your computer is turned OFF.
- 2) Turn on the disk drive. The red error light comes on briefly; the green light indicates that power to the drive is on.
- 3) When the red error light on the disk drive goes out, open the drive door. Insert the **microAddition/microSubtraction** disk. Close the door.
- 4) Turn on the monitor, then turn on the computer. It is important that the computer be turned on last.
- 5) As soon as you see the word **READY** on the screen, type **LOAD “*”, 8, 1 and Press the <RETURN> key.**

Keys to Use

Menu Key

The **<F1>** key will always allow you to return to the previous menu screen. For example, if you are playing **microAddition** menu option 1, NUMBERS, and you press **<F1>** you will return to the opening menu screen and can choose to play **microAddition** OPTION 1, 2, 3, or 4. Or, you can press **<F1>** again and return to the **microAddition/microSubtraction** option screen. At this point you can decide to change your game play to **microSubtraction**.

New Problem Key

During game play, press any key when you want a new problem. Each problem will remain on the screen for you to study, when you are ready to move on to the next problem, press any key.

ATARI

Required Hardware

Atari 800 or 4/6/800 XL, 48K, one disk drive and a color or black and white monitor.

Getting Started

To play **microAddition/microSubtraction**:

- 1) Be sure your computer is turned OFF.
- 2) Insert the BASIC Language Cartridge into the computer's cartridge slot.
- 3) Turn on the disk drive.
- 4) When the busy light on the disk drive goes out, open the drive door. Insert the **microAddition/microSubtraction** disk. Close the door.
- 5) Turn on the computer and your monitor. The program will load and run automatically.

Keys to Use

Menu Key

The <**ESCAPE**> key will always allow you to return to the previous menu screen. For example, if you are playing **microAddition** menu option 1, NUMBERS, and you press <**ESCAPE**>, you will return to the opening menu screen and can choose to play **microAddition** OPTION 1, 2, 3, or 4. Or, you can press <**ESCAPE**> again and return

to the **microAddition/microSubtraction** option screen. At this point you can decide to change your game play to **microSubtraction**.

New Problem Key

During game play, press any key when you want a problem. Each problem will remain on the screen for you to study. When you are ready to move on to the next problem, press any key.

Beginning Play

After the disk has been loaded, you will see a title screen for **microAddition/microSubtraction** appear. The next screen will give you a choice to play either **microAddition** or **microSubtraction**.

DO YOU WANT TO PLAY

1. **microAddition**
2. **microSubtraction**

TYPE 1 OR 2

You can choose to play either **microAddition** or **microSubtraction** by typing 1 or 2. At any time during game play you will have the option of going back to this screen to change games.

microAddition

GAME OPTIONS

1. APPLES
2. NUMBERS
3. ADDING BALLOONS
4. ADDING NUMBERS
- S. TURN SOUND ON (OFF)

S. SOUND KEY:

The **S** Key will allow you to play **microAddition** with or without sound. If you press <**S**> when the menu reads TURN SOUND ON, the game will play with sound. If you press <**S**> when the menu reads TURN SOUND OFF, the game will play without sound.

NOTE: If you press any key during a joyful tune (which is played when you get a correct answer), the music will stop playing. This will only turn off the music in progress.

Refer to DIRECTIONS for descriptions of the **NEW PROBLEM KEY and the **MENU KEY** for your computer.

1. APPLES: NUMBER VALUES

To see number values, type “1” when the **microAddition** menu is displayed on your monitor. Please wait a few seconds for the computer to load APPLES.

An apple tree and the message “HOW MANY APPLES WOULD YOU LIKE TO SEE?” appear on the screen. Type the number (from 1 - 9) of apples you want to see fall to the ground. The apples drop one by one and are counted for you as numbers appear in the fallen apples.

After the apples are correctly counted, press the **NEW PROBLEM KEY** and a new problem appears. The apple tree and the message will appear again. You can choose any number (from 1 - 9) and that number of apples will fall and be counted for you.

In this option, you are shown how many apples a number stands for. You can see for yourself whether 6 is more or fewer than 3.

When you wish to stop playing APPLES, just press the **MENU KEY**. The menu screen will appear and you may choose another option. If you press the **MENU KEY** again, you will have the option to play **microSubtraction**.

2. NUMBERS: COUNTING

To practice counting, type “2” when the menu is displayed on your monitor. Please wait a moment for the computer to load NUMBERS.

Apples appear on the ground with the message “HOW MANY APPLES DO YOU SEE?” Count the apples, then type the number you think there are. If you are right, the apples will be counted and a joyful melody will play! If you are wrong, a sad song will sound — but you get two more chances. If you still don’t count the apples correctly, that’s ok; the computer will show you the right answer.

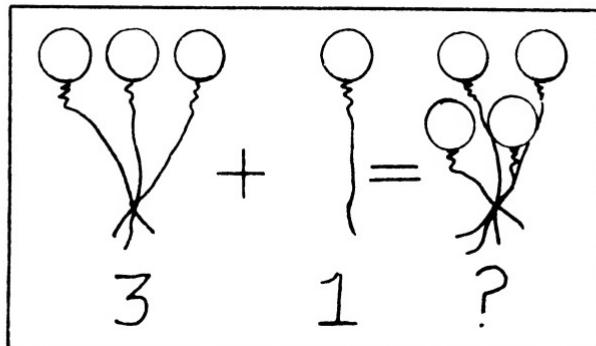
To see another problem, press the **NEW PROBLEM KEY**. The apples appear on the ground and the message will appear again. You can try again to correctly count the number of apples on the ground.

When you wish to stop playing NUMBERS, just press the **MENU KEY**. The **microAddition** menu screen will appear and you may choose another option. If you press the **MENU KEY** again, you will have the option to play **microSubtraction**.

3. ADDING BALLOONS

To see how to add, type “3” when the **microAddition** menu is shown on your monitor. Please wait a few seconds for the computer to load ADDING BALLOONS The message “HELP WITH BALLOONS? Y/N” will appear on the screen, telling you that you may play with or without extra help. If you type “Y,” a problem like the following one appears on the screen.

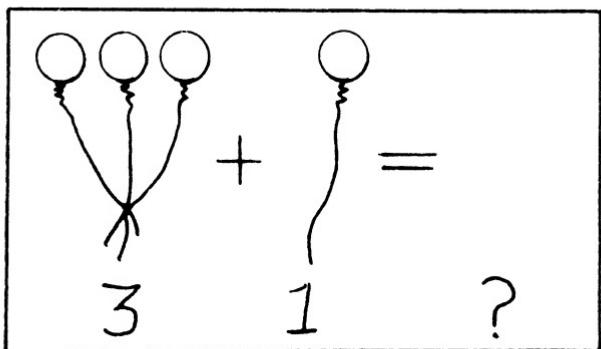
When you ask for help, the correct number of balloons is displayed. You can count the number of balloons to get the answer. If the answer has more than one digit, type in the number from *left to right*, starting with the digit in the tens column and then the units column.



REMEMBER: In option number 3 — ADDING BALLOONS — if your answer has more than one digit, enter your answer from left to right beginning with the digit in the tens column. After you have entered the correct digit in the tens columns, you will have approximately five seconds to enter the number for the units column before the computer counts your answer as wrong.

For Example: step one: $5 + 7 = 1__$ step two: $5 + 7 = 12\leftarrow$

If you type “N” in response to “HELP WITH BALLOONS? Y/N”, a problem like the following one appears on the screen. Note that no balloons appear in the answer.



Whether you are playing with or without help, a joyful tune is played if your answer is correct. If it is incorrect, a sad tune will play — but you will get two more chances to figure out the answer. If you still can't solve the problem, the computer will display the right answer for you.

When you want another problem, press the **NEW PROBLEM KEY**. If you want to go back to the “HELP WITH BALLOONS?” message to change your response, press the **MENU KEY** and “HELP WITH BALLOONS? Y/N” will appear on the screen. At this point you can change the way you are playing ADDING BALLOONS.

When you wish to stop playing ADDING BALLOONS, just press the **MENU KEY** twice to get back to main menu. Press the **MENU KEY** again and you will have the option to play **microSubtraction**.

4. ADDING NUMBERS

To take an addition quiz or use the **microAddition** calculator, select “4” from the main menu. Please wait a moment for the computer to load ADDING NUMBERS. The message “QUIZ OR CALCULATOR? Q/C” will appear on the screen.

QUIZ

If you choose to take a quiz, type “Q” in response to the message “QUIZ OR CALCULATOR? Q/C.” An addition problem will appear on the screen. Type in your answer. If your answer has more than one digit, enter your answer from *right to left* starting with the digit in the units column, the way you do in column addition. When you answer a problem correctly, a joyful tune plays. Answering incorrectly produces sad notes then displays the right answer. The computer will display the number of your right and wrong answers as you take the quiz.

REMEMBER: this is a quiz and you only have one chance to get the answer right. The problems become progressively harder.

REMEMBER: In option 4 — ADDING NUMBERS — if your answer has more than one digit, enter it from right to left beginning with the digit in the units column. After you enter the units digit, you have approximately five seconds to type in the tens digit before the computer counts your answer as wrong.

For Example:

$$\begin{array}{r} & 1 \\ \begin{array}{r} 24 \\ + 37 \\ \hline \end{array} & \begin{array}{r} 24 \\ + 37 \\ \hline \end{array} \\ 1 & \rightarrow 61 \end{array}$$

If you type a “6” first, the computer will count your answer as wrong.
HINT: The computer will display carry overs in addition problems.

If you enter the units column sum correctly, the computer will display the appropriate carry over in the tens column. Simply add the carry over to the numbers in the tens column to get the correct answer.

When you are ready for another problem, press the **NEW PROBLEM KEY**. When you want to stop the quiz, press the **MENU KEY**. Your total score of right and wrong answers will be displayed. Press the **MENU KEY** again and the “QUIZ OR CALCULATOR? Q/C” message will appear on the screen. At this point you can select “C” to use the **microAddition** calculator or, press the **MENU KEY** again to get back to the main menu. Press the **MENU KEY** one or more times and you will then have the option to play **microSubtraction**.

CALCULATOR

If you decide to use the **microAddition** calculator, type “C” in response to the message “QUIZ OR CALCULATOR? Q/C”. Instructions will appear at the bottom of the screen.

TYPE UP TO 5 DIGITS. PRESS < SPACE BAR >

Type a number of up to five digits and it will appear on the screen. Press the space bar and an addition symbol will appear on the next line.

TYPE THE NUMBER YOU WANT TO ADD

You can type a number of up to five digits to add to the number on the first line. Watch the second number appear on the next line.

PRESS < SPACE BAR > FOR THE TOTAL.

After you press the space bar the total will appear.

PRESS THE NEW PROBLEM KEY TO ENTER A NEW PROBLEM.

REMEMBER: You can use the **microAddition** calculator to check your homework.

If you are finished using the calculator, press the **MENU KEY**, and the “QUIZ OR CALCULATOR? Q/C” message will appear on the screen. At this point you can take a QUIZ again by typing “Q”.

If you wish to stop playing ADDING NUMBERS, press the **MENU KEY** twice and you will be returned to the **microAddition** menu screen. If you press the **MENU KEY** one more time, you will then have the option to play **microSubtraction**.

Now that you are a super adder, try playing **microSubtraction**.

microSubtraction

GAME OPTIONS

1. BIRDS
2. NUMBERS
3. SUBTRACTING BALLOONS
4. SUBTRACTING NUMBERS
- S. SOUND ON (OFF)

S. SOUND KEY:

The S Key will allow you to play **microSubtraction** with or without sound. If you press <S> when the menu reads TURN SOUND ON, the game will play with sound. If you press <S> when the menu reads TURN SOUND OFF, the game will play without sound.

NOTE: If you press any key during a joyful tune (the music played when you get a correct answer), the music will stop playing. This will only turn off the music in progress.

Refer to DIRECTIONS for descriptions of the **NEW PROBLEM KEY and the **MENU KEY** for your computer.

1. BIRDS: NUMBER VALUES

To see number values, type “1” when the **microSubtraction** menu is displayed on your monitor. Please wait a few seconds for the computer to load BIRDS.

A tree with nine eggs lying on the ground and the message “HOW MANY BIRDS WOULD YOU LIKE TO SEE?” appear on the screen. Type the number (from 1 - 9) of birds you want to see hatch out of their eggs. The birds fly up to the tree one by one, then are counted as numbers appear.

After the birds are correctly counted, press the **NEW PROBLEM KEY** and a new problem appears. The tree, the eggs on the ground and the message will appear again. You can choose any number (from 1 - 9) and that number of birds will fly up and be counted for you.

In this option, you are shown how many birds a number stands for. You can see for yourself whether 6 is more or fewer than 3.

When you wish to stop playing BIRDS, just press the **MENU KEY**. The **microSubtraction** menu screen will appear and you may choose another option. If you press the **MENU KEY** again, you will have the option to play **microAddition**.

2. NUMBERS: COUNTING

To practice counting, type “2” when the menu is displayed on your monitor. Please wait a moment for the computer to load NUMBERS.

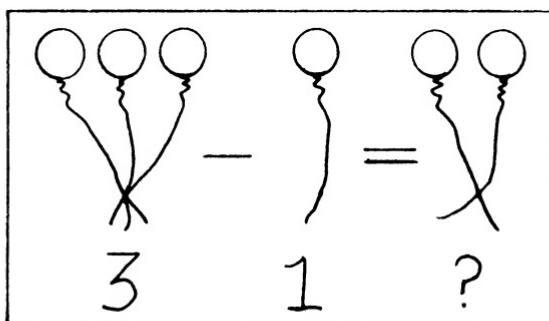
A number of birds appear in the tree with the message “HOW MANY BIRDS DO YOU SEE?” Count the birds then type the number you think there are. If you are right, the birds will be counted and a joyful melody will play! If you are wrong, a sad song will sound — but you get two more chances. If you still don’t count the birds correctly, that’s ok; the computer will show you the right answer.

To see another problem, press the **NEW PROBLEM KEY**. The birds appear in the tree and the message will appear again. You can try again to correctly count the number of birds in the tree.

When you wish to stop playing NUMBERS, just press the **MENU KEY**. The menu screen will appear and you may choose another option. If you press the MENU KEY again, you will have the option to play **microAddition**.

3. SUBTRACTING BALLOONS

To see how to subtract, type “3”, when the **microSubtraction** menu is shown on your monitor. Please wait a few seconds for the computer to load SUBTRACTING BALLOONS. The message “HELP WITH BALLOONS? Y/N” will appear on the screen, telling you that you may play with or without extra help. If you type “Y”, a problem like the following one appears on the screen.

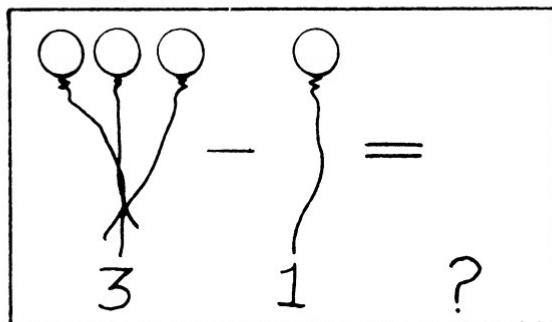


When you ask for help in this problem, the correct number of balloons is displayed. You can count the number of balloons to get the correct answer. If the answer has more than one digit, type in the number from *left to right*, starting with the digit in the tens column and then the units column.

REMEMBER: In option 3 — SUBTRACTING BALLOONS — if your answer has more than one digit, enter your answer from left to right beginning with the digit in the tens column. After you have entered the correct digit in the tens column you will have approximately five seconds to enter the number for the units column before the computer counts your answer as wrong.

For Example: step one: $17 - 5 = 1__$ step two: $17 - 5 = 12\leftarrow$.

If you type “N” in response to “HELP WITH BALLOONS? Y/N”, a problem like the following one appears on the screen. Note that no balloons appear in the answer.



Whether you type “Y” or “N”, a joyful tune is played if your answer is correct. If it is incorrect, a sad tune will play — but you will get two more chances to figure out the answer. If you still don’t solve the problem correctly, the computer will display the right answer for you.

When you want another problem, press the **NEW PROBLEM KEY**. If you want to go back to the “HELP WITH BALLOONS” message, press the **MENU KEY** and “HELP WITH BALLOONS? Y/N” will appear on the screen. At this point you can change the way you are playing SUBTRACTING BALLOONS again.

When you wish to stop playing SUBTRACTING BALLOONS, just press the **MENU KEY** twice to get back to the main menu. If you press the key again, you will then be given the option to play **microAddition**.

4. SUBTRACTING NUMBERS

To take a subtraction quiz or use the **microSubtraction** calculator, select “4” from the main menu. Please wait a moment for the computer to load SUBTRACTING NUMBERS. The message “QUIZ OR CALCULATOR? Q/C” will appear on the screen.

QUIZ

If you choose to take a quiz, type “Q” in response to the message “QUIZ OR CALCULATOR? Q/C”. A subtraction problem will appear on the screen. Type in your answer. If your answer has more than one digit, enter your answer from *right to left* starting with the digit in the units column the way you do in column subtraction. When you answer a problem correctly, a joyful tune plays. Answering incorrectly produces sad notes then displays the right answer. The computer will display the number of your right and wrong answers as you take the quiz.

REMEMBER: this is a quiz and you only have one chance to get the correct answer. The problems become progressively harder.

REMEMBER: In option 4 — SUBTRACTING NUMBERS—if your answer has more than one digit, enter it from right to left beginning with the digit in the units column. After you enter the units digit, you have approximately five seconds to enter the number in the tens digit before the computer counts your answer as wrong.

For Example:

$$\begin{array}{r} 42 \\ - 21 \\ \hline 1 \end{array} \quad \begin{array}{r} 42 \\ - 21 \\ \hline \end{array}$$

→ 21

If you type a “2” first, the computer will count your answer as wrong.

HINT: The computer will display borrowing in subtraction problems. If you enter the units column answer correctly, the computer will cross out the tens column number and display that number minus one over the original digit. Simply subtract the bottom number in the tens column from the new number that is displayed over the tens column number to get the correct answer.

For Example:

$$\begin{array}{r} 31 \\ - 16 \\ \hline \end{array} \quad \begin{array}{r} 2 \\ \cancel{3}1 \\ - 16 \\ \hline \end{array} \quad \begin{array}{r} 2 \\ \cancel{3}1 \\ - 16 \\ \hline \end{array}$$

→ 5 → 15

When you want another problem, press the **NEW PROBLEM KEY**. When you want to stop the quiz, press the **MENU KEY**, your total score of right and wrong answers will be displayed. Press the **MENU KEY** again and the “QUIZ OR CALCULATOR? Q/C” message will appear on the screen. At this point you can select “C” and use the **microSubtraction** calculator or, press the **MENU KEY** again to get back to the main menu. If you press the key one more time, you will then have the option to play **microAddition**.

CALCULATOR

If you decide to use the **microSubtraction** calculator, type “C” in response to the message “QUIZ OR CALCULATOR? Q/C”. Instructions will appear at the bottom of the screen.

TYPE UP TO 5 DIGITS. PRESS < SPACE BAR >

Type in a number of up to five digits and it will appear on the screen. Press the space bar and a minus symbol will appear on the next line.

TYPE THE NUMBER YOU WANT TO SUBTRACT

You can type a number of up to five digits that you want to subtract from the first line. They will appear on the next line. Be sure this number is not larger than the first number you have entered. This would give you a negative number, and the **microSubtraction** calculator will not display negative numbers.

PRESS < SPACE BAR > FOR THE DIFFERENCE

After you press the space bar the difference will appear.

REMEMBER: If the second number is larger than the first, the computer will not display the correct answer. The answer would be a negative number which the **microSubtraction** calculator will not display.

PRESS THE NEW PROBLEM KEY TO ENTER A NEW PROBLEM.

If you want another problem, press the **NEW PROBLEM KEY** to do another problem with your **microSubtraction** calculator.

REMEMBER: You can use the **microSubtraction** calculator to check your homework.

If you are finished using the calculator, press the **MENU KEY** and the “QUIZ OR CALCULATOR? Q/C” will appear on the screen. At this point you can take a QUIZ again.

If you wish to stop playing SUBTRACTING NUMBERS, just press the **MENU KEY** twice and you will be returned to the **micro-Subtraction** menu screen. If you press the **MENU KEY** one more time, you will then have the option to play **microAddition**.

Now that you have played **microAddition/microSubtraction**, you will enjoy playing **microMultiplication/microDivision**, another microMath game from **Hayden Software**. Colorful animated rabbits and fish teach you about the values of numbers and show you how to multiply and divide.

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HAYDEN SOFTWARE COMPANY, INC.
600 Suffolk Street
Lowell, MA 01854
1-800-343-1218
(in MA, call (617) 937-0200)